

Notice of Allowability

Application No.

10/676,080

Examiner

Carol S Tsai

Applicant(s)

MINUCCIANI ET AL.

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/02/2003.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ The drawings filed on 16 December 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Nathaniel Humphries on December 15, 2004.

The application has been amended as follows:

IN THE CLAIMS:

In claim 1, line 3, "or the like with there being in the stations" has been changed to - - with there being in the stations --.

In claim 13, line 3, "or the like with their being in the stations" has been changed to - - with there being in the stations --.

IN THE ABSTRACT:

"A plant is made up of a plurality of automated stations (11) for the performance of an assembly process for body parts or the like. In the stations there are measurement sensors in established measurement points for measurement of geometrical magnitudes of the parts in assembly. The measurement data taken by the sensors are received by a processing unit (16) which detects any deformations of the parts in the various stations and traces back from the deformations detected to the causes thereof and emits a diagnosis signal of the presumed cause.

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For identification of errors a method in accordance with the present invention comprises an analysis step in which are ascertained measurement points and correlations are ascertained between measurements detectable in the measurement points and possible causes which might generate such movements. In a subsequent inline diagnosis step the processing unit supervises any movements in the previously ascertained measurement points and traces back to the possible causes of the movements and signals such possible causes to allow their elimination if desired or necessary. To ascertain the causes a mathematical model to which are applied possible stresses is used and the deformations generated by it are identified to then compare them with the deformations really measured.”

has been changed to

“A plant is made up of a plurality of automatic stations for the performance of an assembly process of body parts or the like with there being in the stations automatic support and blocking means for the parts to be assembled and automatic assembly means for the parts supported and blocked and comprising in the stations measurement sensors in established measurement points for measurement of geometrical magnitudes of the parts in assembly with the measurement data taken by the sensors being received by a processing unit which takes any deformations of the parts in the various stations and goes back from the detected deformations to the causes thereof in the assembly process and emits a diagnosis signal of the presumed cause.”

Allowable Subject Matter

2. Claims 1-15 are allowed.
3. The following is an examiner's statement of reasons for allowance:

U. S. Patent No. 5,341,304 to Sakamoto et al. is the reference closest to the claimed invention. Sakamoto et al. disclose a production process administration system in which a plurality of correction stations are disposed in the correction line, in a case where any correction operation is not finished properly at any one of the correction stations the correction operations were distributed to, which system is capable of re-distributing a re-constructed correction operations to the subsequent correction stations in which a plurality of tools used for performing a correction operation are used. However, Sakamoto et al. do not teach in a plant made up of a plurality of automated stations for the performance of an assembly process for body parts with there being in the stations automatic means for support and blocking of the parts to be assembled and automatic assembly means for the supported and blocked parts a method for identification and management of errors and defects comprises: a) preliminary analysis steps comprising the steps of: determining measurement points sensitive to the movement of constraint points which comprise support and blocking points for the parts in the stations, and determining correlations between measurements detectable in said measurement points sensitive to said movement and possible causes which might generate such movement; b) inline diagnostic steps comprising the steps of: overseeing any movements in the previously identified measurement points and in this case tracing back to the possible causes of the movements, and identified measurement points and in this case tracing back to the possible causes of the movements, and signaling such possible causes to allow their elimination if desired or necessary; and including all of the other limitations in the respective independent claims.

U. S. Patent No. 5,341,304 to Sakamoto et al. is the reference closest to the claimed

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invention. Sakamoto et al. disclose a production process administration system in which a plurality of correction stations are disposed in the correction line, in a case where any correction operation is not finished properly at any one of the correction stations the correction operations were distributed to, which system is capable of re-distributing a re-constructed correction operations to the subsequent correction stations in which a plurality of tools used for performing a correction operation are used. However, Sakamoto et al. do not teach plant made up of a plurality of automatic stations for the performance of an assembly process of body parts with there being in the stations automatic support and blocking means for the parts to be assembled and automatic assembly means for the parts supported and blocked and comprising in the stations measurement sensors in established measurement points for measurement of geometrical magnitudes of the parts in assembly with the measurement data taken by the sensors being received by a processing unit which takes any deformations of the parts in the various stations and goes back from the detected deformations to the causes thereof in the assembly process and emits a diagnosis signal of the presumed cause.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Savoy et al. disclose a method and apparatus for the assembly of body components to an automotive body that has undergone a progressive series of framing and welding steps so as to produce a structurally rigid body frame, termed a body-in-white.

Naik et al. disclose an automated computer modeling system generating a welded finite element model of a vehicle body.

Qzaku et al. disclose Vehicle body assembly apparatus and assembly method.

Katayama et al. disclose a production line for assembling a pair of left and right car components, capable of assembling a pair of high quality car components by on line at high operating efficiency and productivity and capable of controlling jigs and molds with high dimensional accuracy.

Pryor discloses method and apparatus for assembly of car bodies and other 3-dimensional objects.

Tominaga et al. disclose an automobile parts assembling line, parts pallets carried by a self-running pallet carriage being transferred onto self-running work carriages loaded with fundamental vehicle works of various vehicle models and a specific set of parts on the parts pallet being assembled to a specific model of fundamental work on the primary self-running carriage one after another while the self-running work carriage is self-running along an assembling station.

Nomaru et al. disclose a method and apparatus controlling a production line including at least one work station operable in one of a normal production posture and at least one extraordinary production posture for producing products and a checking station located

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downstream of the work station for making a quality check to provide a quality audit result for each of the products transferred in succession from the work station.

Alborante disclose a positioning and/or configuration of the fixtures used in the various machines or stations of a production line being checked by an automatic checking device including a coordinate-checking unit which moves automatically along the line and stops at each machine or station in order to carry out the necessary checks.

Haba, Jr. et al. disclose method and system for the automated assembly of power train components along a plurality of interconnected, closed loops within cells of the system wherein parts and/or subassemblies of the components are assembled on the same assembly pallet on which they were robotically kitted.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice

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may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.



Carol S. W. Tsai
Patent Examiner
Art Unit 2857

12/16/04